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To consider and take action upon all general questions relating to the navigation and carrying business of the Great Lakes, maintain necessary shipping offices and in general to protect the common interest of Lake Carriers, and improve the character of the service rendered to the public.

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RETAIN COMPETENT OFFICIALS.

There has been too much politics at work the last few years in regulating the appointment of officials and employes at the Sault Ste. Marie Canal.

President Millen, of the Lake Carriers' Association, had this to say concerning the matter, this week: "It certainly is not right that politics should be allowed to mix up with the management of the lock. It is the most important point on the lakes. It is the key to navigation between Lake Superior and the lower lakes, and the incompetency of any one man employed there is likely to cause it to default and blockade traffic. The machinery is complicated, eternal vigilance is priceless, its good condition should at all times during the navigation season be kept in mind. I should deplore its full or even part control by politicians."

When the removal of Capt. Spaulding was being attempted the late Gen. Poe, in charge of the work, used every influence to have him retained; but the politicians were too many for him. He used the same influence in behalf of Supt. Lynch, and again he failed.

It would appear as if political aspirations ought to be entirely eliminated from the employment of "Soo" Canal employes and the retention of competent men independent of their politics be ensured.

A NAVAL RESERVE PRACTICE SHIP.

So the famous old U. S. S. Yantic is to come to the lakes. If memory is correct, the last time the writer saw the Yantic was in Port Adelaide, South Australia, or, perhaps it was Melbourne. It has now been decided by the navy department that the Yantic shall come to the lakes for the use of the naval reserves. She is at present in the West Indies, en route home. At the Brooklyn navy yard she will be overhauled and sent to fresh water by way of St. Lawrence and Welland Canals; the cost of bringing her through the canals will be $1,200, which will be borne by the Detroit naval reserves.

The Yantic will not reach Detroit before the middle or latter part of August, so the Michigan will be used as a practice boat and training ship. The Yantic, on her arrival, will be stationed in Detroit, and will be lent to the Saginaw reserves as they may need her. Lieut.-Commander Wilkes says that the cost of putting the Yantic in condition for lake use will be small.

TACOMA COMMERCE.

Harbormaser Clift makes the following report of ocean commerce at the port of Tacoma for the month of May, 1897:

IMPORTS.	Value.
Cargoes of N. P. S. S. Pelican and Olympia from China and Japan; value	$ 184,718 01
Previously reported	2,355,368 61
Total imports five months	$2,540,086 62

EXPORTS.	Value.
15,355 barrels flour	$ 60,945 00
8,018,395 feet lumber	62,509 00
32,010 tons coal	96,030 00
Merchandise to China and Japan	74,354 00
Merchandise to British Columbia	29,866 45
Total	$ 323,704 45
Previously reported	2,084,243 60
Total exports five months	$2,407,948 14
Inward registered tonnage	45,327
Inward cargo tonnage	7,250
Outward registered tonnage	46,259
Outward cargo tonnage	50,057
Deep sea arrivals	37
Departures	37
Wheat to San Francisco, tons	900
Flour to San Francisco, tons	900

ANOTHER WRECK-RAISING DEVICE.

An ingenious invention for raising sunken wrecks, which has just been invented by Felix Gaillard, a Frenchman of Bordeaux, is beginning to attract considerable attention among wreckers.

This apparatus consists of a number of waterproof bags made in the shape of huge cylinders or pipes, long tubes which connect these bags with a powerful air pump and some heavy canvas and chains. The air pumps used in this wrecking machine are much more powerful than the ordinary kind, and are carried in the stern of tugs.

With the canvas the diver patches the holes as tight as possible, and at the same time opens all the hatches of the sunken ship. That much being accomplished, the next step is to make fast to the hull in the securest possible manner a large number of air-tight cylindrical bags. These are sent down to the diver, who with chains binds them along the keel on either side. As the bags gradually fill with air under the influence of the powerful pressure from above they exert a lifting power on the hull which is not to be resisted. Gradually the hull is capsized and eventually rests on the bottom upside down.

Meantime the large main pipes, which were first made fast inside the hull, have not been idle, and as the powerful and steady current of air is forced through them into the hull, the water is gradually forced out and light, buoyant air takes the place of the heavier water. As the air pressure increases the hull becomes lighter and rises to the surface.

A FLOATING ACADEMY.

David Lumgair, the well-known naval architect of Bay City, has just about completed the plans for a three-masted schooner which, in its way, is to be one of the unique enterprises of the lakes. The plans are the idea of Prof. J. G. Lamson, who has considerable reputation as a disciplinarian.

The vessel when built will have accommodations for about sixty people, students and faculty. She will be about 135 feet over all, 26 feet beam, and will draw in ballast about nine feet. Boys between the ages of 14 and 18 will be allowed to enter the school and all the work of the vessel is to be done by them, from "scrubbing down" to navigating the ship. The highest in rank will be the captain and all the offices will be filled according to the merit roll, which will be made up each month. All work connected with the sailing will be under the control of one of the most experienced captains on the lakes, who will have a number of assistants. This will furnish much of the needed recreation that the students need and boat drills will make up for the remainder.

Going on at the same time will be the academic development under the immediate supervision of the principal. A three years' course will be offered, backed by the best teaching force that can be obtained. Students will be fitted for college or for business. Besides the principal and the master, the faculty will contain, among others, a physician, a professor of mathematics and an instructor in the languages.

It is expected to form a stock company to build the boat and that she will be ready by the 1st of February next to receive pupils. February and March will be spent in familiarizing the boys with ship's duty and "learning the ropes." The studies will be carried on every day.

As soon as the weather becomes somewhat settled in the spring the vessel will make the rounds of the great lakes and down the St. Lawrence, visiting everything of interest that can be reached by water and even for a few miles inland. The large cities, canals, locks, mines, manufactories, points of history, battlefields, works of nature and art, will furnish texts for study and an education which no "stationary school" could ever do. Students who can be trusted will have all the liberty they need, while those who need the watchcare of faithful teachers will be allowed ashore only when attended by one of the instructors.

EASTERN FREIGHT REPORT.

The usual weekly freight report furnished the Record by Messrs. Funch, Edye & Co., New York, states that the demand for boats for entire grain cargoes has been very light during the week, and it is practically impossible to place prompt steamers, except at a concession from the rates last reported. There is still some unfilled demand for medium-sized boats for Cork f. o. b. August loading, for which 3s would probably be obtainable, but little or no inquiry for intervening months. Large boats still find employment in the deal trade and from the St. Lawrence at a shade easier figures. Timber freights from the Gulf, however, continue fairly well maintained at former figures. Charters for case oil show a slightly declining tendency, in spite of poor prospects for home freights from the far East, and the amount of tonnage now offering for this business exceeds the momentary inquiry.

Since our last report no new features of particular interest have appeared in our market for sailing vessels, which remains quiet, but firm, under light offerings of ready tonnage and vessels to arrive. Rates in all directions are without material change.

NEWS AROUND THE LAKES.

CHICAGO.

Special Correspondence to The Marine Record.

At the Independent Tug Line's floating dry dock the schooner C. Michelson is in for bottom calking.

J. A. Calbick & Co. chartered the steamer J. H. Prentice for oats to Buffalo at 1⅛ cents, consorts Middlesex and Halsted corn to Buffalo at 1¼ cents.

The following telegram was received by Barry Bros., of the Independent Tug Line, on Tuesday: "Bay City, Jan. 8, 1897.—Ritta McDonald successfully launched, she looks fine, everything all right.—James Davidson."

The steamer Fayette has been chartered by a Chicago syndicate and will be engaged in the fruit trade between Benton Harbor and Chicago. Capt. L. B. Coates is master of her. Wm. Savelle, shipbuilder, has been busy housing her in on deck.

The tug Monitor was in dry dock to have a leak stopped, the M. F. Butters to have her shoe straightened, the Charles Reitz for a new piece of forefoot, some new bottom plank and repairs to stern bearing; the tug Leo is in for some new bottom plank and calking.

J. J. Rardon & Co. chartered the barge Amazon for 217,000 bushels of corn to Buffalo at 1⅛ cents; steamer Interocean and consort Winslow and steamer Hadley for corn to Buffalo at 1¼ cents. Steamer Mecosta, oats to Buffalo at 1⅛ cents; steamer Progress, corn to Port Huron at 1 cent.

H. W. Cook & Co. chartered the barge Massasoit and steamers W. H. Wolf and New Orleans for clipped oats to Buffalo at 1⅛ cents, steamer W. B. Morley for corn to Buffalo at 1⅛ cents; steamer Westover and consort Bliss for steel rails, South Chicago to Duluth, and lumber, Duluth to Chicago.

On Tuesday the Canadian schooner Minnedosa, Capt. John Irwin, going up the south branch of the river, light, stern first, in tow of the tugs Crawford and W. H. Wolf, had her jib-boom carried away, at Adams street bridge, through the eagerness of the bridgetender to close the bridge before the schooner's head gear had cleared the draw.

A scow in tow of the tug Andrew Green when going down the river Saturday morning, blowed up, causing an explosion and shattering the glass in hundreds of windows in the vicinity of Rush street bridge, doing considerable damage to the Goodrich Grant Co.'s dock warehouses, to the Western Transit Co.'s warehouse and Kirk's Soap Factory. The steamer Chicago had the glass in nearly all the windows smashed. The explosion, it is conjectured, was caused from gases which had generated in the hold of the scow.

The steel barge Amazon was successfully launched Saturday morning at the Chicago Shipbuilding Co.'s shipyard at South Chicago. Her dimensions are 385 feet over all, 48 feet beam, 28 feet molded depth. The ceremony of christening was gracefully performed by Miss Ida May Corrigan, daughter of James Corrigan, of Cleveland, owner of the Amazon. The new barge completed taking on her cargo Tuesday afternoon at South Chicago. The load consisted of 217,000 bushels of corn, weighing 6,070 tons on a draft of 16½ feet, which is the largest cargo on record, exceeding the cargo of steamer Queen City by 10,000 bushels.

The Independent Tug Line's new tug Ritta McDonald, which they expect to arrive here next week, is of the following dimensions: 80 feet over all, 20 feet beam, 11½ feet hold. She has two high pressure engines 18 by 22 each, steam for which will be supplied by a Marine boiler 7½ feet diameter by 13 feet long, to be allowed 160 pounds steam pressure, built by Johnson Bros, Ferrysburg. The McDonald will be a good addition to the fine fleet of tugs at this port. Miles Barry, of the Independent Tug Line, arrived home Friday, from a trip east to Buffalo, Cleveland and Detroit. Whilst away he purchased a Worthington 14-inch wrecking pump and outfit, also a diving outfit, which will be forwarded and used by the I. T. Line at this port.

Judge Lochrens' award of $15,00· salvage to the master and crew of the steamer Arabia in the Hadley case at Duluth, created a great deal of comment in marine circles here. The prevailing sentiment was that if masters and crews insisted upon a share in the salvage of boats which they have rescued from shipwreck, there would be a general adoption of such a rule. The principle involved in the Duluth decision was generally endorsed. "Although we may be the first sufferers," the agent of one of the big Buffalo lines said, "yet I must give my unqualified endorsement to the principle that crews are entitled to a share where they risk their lives to save other vessels. It is useless to deny that they have risked their lives. Any vessel that stops when there is a sea running to get a tow line to another, does so at great risk. There is always danger of the tow line snapping and getting into the wheel, leaving the rescuing boat as helpless as the ones she had intended to pick up. There are other risks as great, and when men undergo them, they are entitled to a recompense." Some of the underwriters seem inclined to favor salvage for crews, on the selfish theory, as they confess, that it will result in crews putting forth greater effort to save property if they feel that they will receive something substantial for their work. The amount of property saved, it is thought, would far exceed what would be paid out in salvage to them.

BUFFALO.

Special Correspondence to The Marine Record.

"Seven halcyon days of blessed rest," is the legend on the front cover of the neat pamphlet announcing the opening of the excursion season of the Northern Steamship Co., and the reason for such a title is given in short to be on account of the safety, speed, luxurious appointments and admirable hotel service of the North West and North Land. The first boat will leave Duluth on June 15th and reach here on the 18th at 10 a. m., sailing again at 10:10 on the same evening.

It appears that the machinery of the steamer State of Ohio was pretty thoroughly wrecked on her trip to Cleveland. A report to Johnson & Higgins from Capt. Logan, who took part in her survey, states that her wheels, shaft and steam chest are all that are left intact. Her steam cylinder, condenser, air pump, connecting rod, main beam and several minor parts of the machinery are broken and destroyed. The hull damage is slight, but there was great danger to the vessel, as the broken connecting rod just missed punching a hole through the bottom. It will take several weeks to repair her and will cost about $15,000.

Capt. Murray, of the steamer Arabia, who was for the first time on the lakes, awarded some of the salvage money obtained for saving a disabled vessel, the Hadley, appears to be in doubt as to the advantage he is to obtain from the award on the long run. He said yesterday that he was not sure how it would be regarded by vessel owners in general. There appears to be a mistake in the first report, that he insisted on receiving some of the salvage money. This was not his idea, but was a claim set up by counsel. While insurance men appear to regard the award as an act of justice as well as good law, there are vessel owners who fear that it will turn the heads of the captains and get them into trouble. One thing is certain. The demand must come entirely from some other source than from the captain, till the rule is well established.

Capt. Joseph Corcoran, of the Anchor Line steamer Mahoning, had such a close shave when just this side of the Lime Kiln crossing one afternoon this week that he will probably remember for some years to some, says the Detroit Free Press. The Mahoning was coming down and soon after passing a big up-bound steamer the captain sighted a whaleback coming up with two consorts. Owing to the strong wind which blew across the river, the barges were yawing out of their course and over toward the American side. Fearing a collision with one of these barges, he blew two whistles, showing that he wished to cross the bows of the whaleback tow and pass on the Canadian side of them. The whaleback answered with one; Corcoran again gave two, which were again answered with one. Then Corcoran gave in, blew one whistle, put his wheel hard to port and did his best to keep away from the tow, which was now close aboard. He escaped the steamer without particular trouble, but with the first barge he seemed for a time destined to collide. The two vessels came together, but it was only a rubbing match. The creaking noise as they both scraped along could be heard a quarter of a mile away. Now it does seem to me that a scraping match heard 1,200 feet away and that between two moving objects ought to have done some damage, somewhere, although, for that matter, it is always the proper caper to swear no harm occurred until it is found later.

CLEVELAND.

Special Correspondence to The Marine Record.

Sales of ore to the Wheeling furnaces during the past week aggregate about 3,000,000 tons, but companies selling it have connections with vessel interests, and outsiders get small chance at freight contracts.

The Globe Iron Works Co. will launch the steel schooner Polynesia, built to the order of James Corrigan and others, on Saturday, June 12th, at eleven o'clock, standard time. Invitations have been sent out to all persons interested.

The steamer State of Ohio was towed to Detroit by the tug Alva B. T. F. Newman, general manager of the Cleveland & Buffalo Transit Co., has made arrangements with the D. & C. Line to put the steamer City of the Straits on the Buffalo route until the State of Ohio comes out again. The steamer State of New York will go back on the Toledo route. The State of Ohio will be repaired by the Detroit Dry Dock Co. That was part of the deal by which Manager Newman got the City of the Straits.

Robert Logan, for the underwriters, and Frank Kirby, of Detroit, made a survey of the steamer State of Ohio here this week. The hull suffered no damage from the accident to the machinery on Lake Erie on Monday night, but the engine is a complete wreck. The wheels and shaft are not damaged and some of the rods can be straightened and used again. It will take four or five weeks to make repairs. During that time another steamer will take her place on the Buffalo route while the Ohio will have her engines rebuilt at the yards of the Detroit Dry Dock Co.

Commander William M. Folger, of Detroit, inspector of the eleventh light-house district, is considering the advisability of recommending a change in the range lights at the mouth of St. Mary's River—Frying Pan and Pipe Islands. In a letter to Capt. George P. McKay, he asks for an opinion in the matter. "I think of recommending," he says, "to have the light white instead of red, and more powerful lenses substituted. They seem small and of little value, to me. Would white be liable to confuse with the lights at Detour?" Capt. McKay does not feel at liberty to suggest a change in these ranges in advance of a consideration of the question by vessel masters, and will be pleased to submit to Commander Folger any opinion that he may receive from captains of vessels trading to Lake Superior.

DETROIT.

Special Correspondence to The Marine Record.

According to private advices received here during the week the Rockefeller-Cargnegie syndicate has resumed negotiations for additional vessels to carry ore from the head of Lake Superior, the rate offered being 50 cents. This indicates that the charters, partially consummated ten days ago, were declared off because the rate to be paid, 60 cents, appeared to be too high.

The Detroit & Cleveland people had a little skirmish with the foreign labor law a few days ago. Immigration Inspector Flummerfeldt discovered that four Canadians had been hired as firemen. He notified General Manager David Carter, who ordered Engineer James Middleton to discharge them immediately and fill their places with American citizens. The men made affidavits afterward concerning the manner of their coming. "We heard there was a chance to go to work on the City of the Straits, so we came over a few days ago and went to work," was the substance of their story. It is claimed on the docks that Engineer Middleton gave the men the tip. It is evident that nothing of their antecedents or origin was known to any of the company's officers.

When the Detroit lodge of the Marine Engineers' Beneficial Association laid to rest the remains of George Francombe, a few days ago, there passed from view one who had plied his trade as marine engineer continuously on the lakes for forty-seven years. He learned the trade at Bristol, Eng., of which city he was a native, and came directly to this country. It was his lot to see many great changes in marine engineering, and during his long siege of enforced confinement it was interesting to the younger engineers who called on him to hear him speak of the good old days when ten pounds of steam was the pressure used on some steamers. He was a man who always enjoyed the highest respect of his associates and of all others with whom he came into contact. He has left a widow, two daughters, and two sons, one, Charles, being engineer of the Nipigon, and the other, Thomas, of the steamer Crescent City. He has always been an active member of the local association.

FLOTSAM, JETSAM AND LAGAN.

Capt. F. A. Goodell qualified at Cleveland as master of the steamer Columbia on Wednesday.

The manager says that the steamer State of Michigan of the Grummond Line will resume her trips on the 15th.

While unloading the steamer Germanic at Ogdensburg, Wednesday morning, Michael Mahoney was caught by the steam shovel and had his right hand taken off.

The Buffalo life saving station is working hard for a telephone. They claim that people might die of exposure in some parts of their district before word could reach them without telephone communication.

Capt. Black, of the steamer Simon Langell, who was reduced to the position of watchman by the local inspectors at Duluth for racing into that port with the steamer Elfin Mere, has been reinstated.

Manager Ludgate, of the Traverse City Lumber Co., is trying to fight the Longshoremen's Union. He stated his views about unionism with such frankness, Tuesday, that the men threw him into a pile of rubbish at the docks.

The tug Rita McDonald, built by James Davidson for Barry Bros.' independent line of Chicago, was launched Tuesday. She is 80 feet keel, 20 feet beam and 10½ feet hold. She has two engines, diameter of cylinders 16½x22 inches, and a boiler 7½x13 feet. She is named after the daughter of a Chicago banker.

PROPOSALS FOR BUILDING LIFE-BOATS.

The government division of the Treasury Department have opened the proposals for the construction of ten life boats, six for Grand Haven, Mich., and four for Monmouth Beach, N. J. The bids were as follows:

James Bircher, Philadelphia, for four boats, each	$4.858
F. C. Beebe, Greenport, L. I., for four boats, each	3,400
B. F. Wood, City Island, N. Y., for ten boats each	3,200
Detroit Boat Works, Detroit, Mich., for six boats, each	2,950
Detroit Boat Works, Detroit, Mich., for four boats, each	3,000
Racine Yacht and Boat Works, Racine, Wis., six boats, each	2,988
Samuel Ayers & Son, Nyack, N. Y., for four boats, each	2,950
Charles M. Woodruff, Detroit, Mich., for ten boats, each	2,280
Henry N. Botsford, Port Huron, Mich., for six boats, each	2,257
Henry N. Botsford, Port Huron, Mich., for four boats, each	2,285

The contract will probably be let to Botsford, of Port Huron,

NEW TRANSPORTATION LINES.

It is the opinion among transportation men in Detroit that the new deal by which the Wabash road leases the Grand Trunk lines between Detroit and Suspension Bridge, and the Erie lines between the latter point and Buffalo, giving it direct connection between St. Louis and Buffalo, will cause it to change the route of its lake steamers now, and for some years, running between Toledo and Buffalo to omit Toledo and make Detroit the terminus.

This ought to have been done long ago, say these experts. True enough, Toledo is the natural lake shipping point for all the Ohio coal and a great deal of the Indiana and Ohio wheat. This prestige Detroit can never take away from her, says the Free Press, because Toledo has the advantage in geographical location. But, owing to the conformation of the Wabash lines, Detroit is by far the better point for transhipment. At present the only part of the Wabash system to receive direct benefit from the Toledo terminus is that between Toledo and Peru, Ind. This taps a fruitful, but very small, territory. The line from Peru to Detroit, equally as important, and the line between Chicago and Detroit are handicapped because all freight from them, if it is to be shipped by water, has to be taken to Toledo, via Peru, a most roundabout way, that loses it in the course of a year many thousands of miles and costs it exceedingly in time and extra haul.

Toledo as a terminus shortens but little the route for all that part of the Wabash system west of Logansport and Peru. Detroit is 62 miles to the northeast of Toledo, but this distance is shortened by the fact that the road from Peru to Detroit takes a long slant. The saving in distance from Toledo to Buffalo over Detroit to Buffalo is so slight as to be not worth considering. The little advantage possessed by Toledo over Detroit in distance and closeness to the Indiana and Ohio territory is much more than offset by the shorter haul allowed Chicago and points beyond in the northwest. Here is the most fertile and productive wheat region in the world. Duluth and Superior have stolen from Chicago a great deal of this wheat, owing to the fact that they have better facilities for handling it into vessels. The south has stolen much more because the great railroad lines running south from Chicago and the fields have diverted the stuff to the gulf, their influence being due to the fact that there it is loaded directly into vessels for foreign points, thus obviating the high transfer charges at Buffalo, the delay of trans-shipment by railroad and canal across New York state to the metropolis, and another transfer into the vessel at that point.

Chicago will gladly welcome any chance to get some of this back. The Wabash gives her an almost air line to Detroit; thence by steamer to Buffalo is another air line. Detroit could just as well be made a trans-shipping point for a good deal of this Chicago wheat. The Wabash has the big Union depot elevator and could get the use of the D. & M. elevator, not quite as large. Neither is doing anything in the vessel line at present, nor are they likely to again. Both have fine wharves, and the harbor facilities and depth of water are all that could be asked. The shortening of distance over the Duluth route down Lakes Superior, Huron and the rivers would be many hundreds of miles per trip. At Buffalo the high transfer charges will before long be a thing of the past. The few men who have grown rich extorting high transfer rates from the lake fleet see the goose with the golden egg slipping away from them. Armour, Bartlett, Frazier & Co., Counselman and others are putting up a combination of big steel elevators at Buffalo for the handling of their own grain at a smaller price than the trust handled it, and besides this are preparing to handle outside grain at a lower price than fixed by the trust. All this should help on the scheme of winning back to Chicago some of her old-time grain trade.

Grain shipped from the northwest over this route would require four trans-shipments—one at Chicago, one at Detroit, one at Buffalo and one at New York—but if the transfer charges at each point can be made cheap enough there is no reason that the route should not get the business, because it is shorter by several hundreds of miles than any other.

AN ATLANTIC TRIP.

What is certain to be a money losing charter has been made since our last issue. It now appears that the Canadian steamer Queen of the Lakes has taken a cargo of corn from Toledo, which she will discharge in Glasgow, Scotland. The steamer will go direct to Kingston, Ont., where part of the cargo will be lightered to enable her to get through the St. Lawrence River canals. This grain will be reloaded at Montreal and the Atlantic voyage begun. This expedition was frequently made in the days of the sailing schooners, but in later days, only the small Scandinavian steamers which brought fish to the lakes have made the trip. The Queen of the Lakes is owned by Richardson Brothers, of Kingston, and measures 374 tons gross. It is plain to be seen that they might as well send a good-sized long boat across as a craft like the Queen of the Lakes, and if Richardsons knew enough they would simply transfer the grain at Kingston and let a larger boat carry it across.

U. S. LIGHT-HOUSE.

According to the annual report just issued for the year ended June, 1896, there were under the control of the Light-House Establishment the following named aids to navigation:

Light-houses and beacon lights, including twenty-seven temporary lights, Mobile Harbor	1,091
Light-vessels in position	41
Light-vessels for relief	5
Electric-lighted buoys in position	16
Lighted buoys in position, including two buoys, temporary system, Mobile Harbor	18
Fog signals operated by steam, caloric, or oil engines	137
Fog signals operated by clockwork	193
Post lights	1,765
Day or unlighted beacons	422
Whistling buoys in position	70
Bell buoys in position	106
Other buoys in position, including pile buoys and stakes in Fifth district and buoys in Alaskan waters	4,665

In the construction, care, and maintenance of these aids to navigation there were employed:

Steam tenders	32
Steam launches	5
Sailing tenders	2
Light keepers	1,253
Other employes, including crews of light-ships and tenders	1,108
Laborers in charge of post lights	1,360

THE BEESON MARINE DIRECTORY.

It appears that the Beeson Marine Directory of the Great Lakes is meeting with substantial success, during this, as well as the past several years of its publication.

We hear nothing but praise of the work done from Buffalo to Chicago and it is certainly an acquisition to lake marine literature.

ORE AND LUMBER SHIPMENTS.

The shipments of iron ore from Duluth, Superior and Two Harbors for the month of May, says the Duluth News-Tribune, were within about 50,000 tons of what they were in May a year ago. For May this year the shipments amounted to 576,334 tons, and last year for the corresponding month the amount was 628,861 tons. The shipments from Two Harbors and Duluth were each within less than 2,000 tons of each other. The shipments from the Duluth, Superior and Western showed a slight increase for May over the same month last year.

The lumber shipments for May amounted to 32,523,094 feet, while for the same month last year the shipments were more than 45,000,000 feet. The wheat shipments from May from the head of the lakes have already been published by the News-Tribune. The shipments of flour from Duluth for May were 211,506 barrels. Coal receipts amounted to 79,532,091, of which amount 9,000 tons was delivered at Two Harbors.

A REDUCTION OF FINES.

Through the good offices of Senator McMillan the treasury department has decided to reduce the fines levied upon the tugs Industry and Progress, built by Capt. Davidson, of Bay City, and owned by the Barry Bros., of Chicago and Duluth. These tugs were fined $1,000 each for leaving port without their lifeboats, but as Senator McMillan explained to Assistant Secretary Spaulding, the violation was the result of carelessness rather than of ignorance or from any desire to evade the well-known laws on the subject of due and proper equipment. It is well known that no wooden vessels are better constructed or equipped than those built at the Davidson yard, and it is presumed that the lack of outfit in this particular case was due to the inattention of a subordinate, the detail being unknown at the time to Capt. James Davidson or his son.

LOGICAL REMARKS.

While at Detroit the other day, Capt. George P. McKay, of Cleveland, treasurer of the Lake Carriers' Association, is reported as saying, in reference to the grumbling against Rockefeller:

"I don't blame Rockefeller for the depression in lake trade. What has he done that he hadn't a perfect right to do, and that the other people were not doing? He built only two out of eighteen large steel vessels constructed on the lakes last winter. He was stuck in some iron mines, and had to take them to save himself. Then he did just what the other iron and steel men were doing—built his vessels to carry his ore. His deal with Mr. Carnegie was simply a case of two bright men seeing their mutual interests.

"As for his boats, he built them according to modern conditions of business on the lakes. Everything is tending to lower freights. We increase our season's carrying capacity in more ways than by making the vessels larger. We do in an hour what once it took a week to do. We take 5,000 tons of ore out of a vessel in three hours, and we load her in one hour. We have increased our tonnage in these various ways until the supply far exceeds the present demand, and we have all of us been guilty.

"I look upon the modern vessel as the natural successor of the wooden fleet. The old schooner towed by a tug was put out of date by the steambarge in the same way. The Canadian Government is working at a deep waterway to the sea. That will hurt us on the lakes. The tramp seagoing freighters will come up here and we cannot go to sea. If Congress would hurry up and finish the tariff legislation it would help us, and then if they would let that subject alone for the next ten years things would improve."

NONAGENARIAN.

Capt. Francis Martin, a retired member of the United States revenue marine service, quietly observed the ninety-seventh anniversary of his birth, June 3, by receiving informally relatives and friends at his residence in Detroit. Capt. Martin is an extremely well-preserved man at 97, and does not look over 70 or 75. He weighs nearly 180 pounds and goes out walking two or three times a day when the weather is good. He is a great reader of books, magazines and newspapers. He reads sometimes until 10 o'clock at night, but his daughters generally see to it that the light in his room is extinguished earlier in the evening. His only infirmity is a slight deafness.

Capt. Martin was present at Napoleon Bonaparte's funeral, May 5, 1821. It was a mere coincidence his being there. He was second mate on a sailing vessel which put in at St. Helena for water. He joined the group assembled at the spot which Napoleon had selected for his grave. It was under the shadow of a willow and the young mariner was deeply affected by the services. The firing of cannon was incessant and many soldiers were in attendance. Upon the general's bier was the military cloak he had worn at Marengo. Capt. Martin is emphatic in the belief that Napoleon's death was hastened by the treatment he received at the hands of the British officers on the island.

The first real sickness Capt. Martin ever had was twenty-five years ago, when at the age of 71 he was stricken with typhoid fever. But severe as the fever was it played little ravage with his constitution.

Capt. Martin was connected with the United States revenue marine service for many years, and at one time commanded the steamer John Sherman, stationed in the Detroit district.

ANNUAL REPORT OF THE LIGHT-HOUSE BOARD.

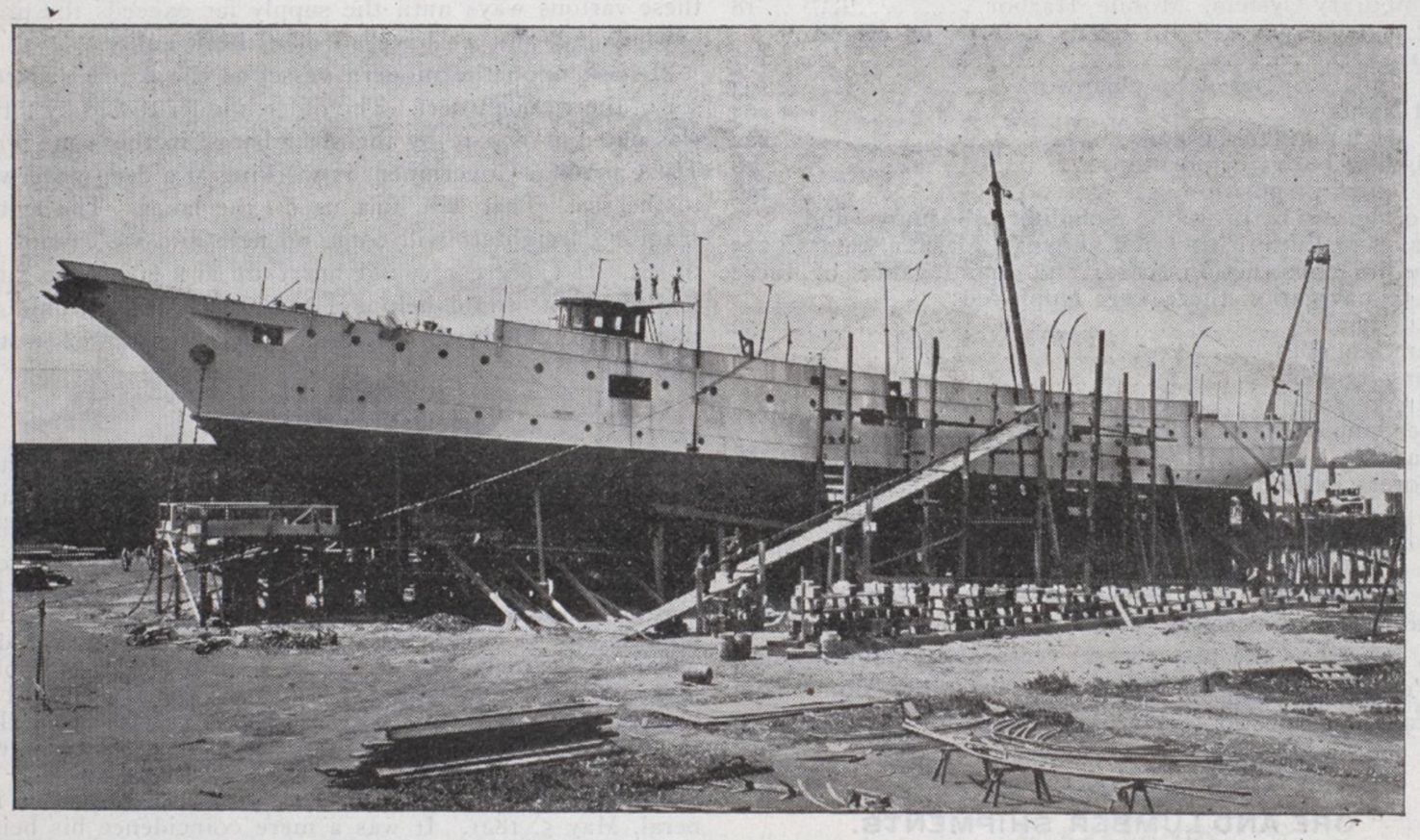
The annual report of the light-house board for the fiscal year ended June 30, 1896, has just been received by the Record, having been delayed by the necessity to provide elaborate maps of the several light-house districts. The reports regarding the lake districts is merely routine and deals exclusively with matters now a year old, nearly all of which are familiar to readers of The Marine Record. The recommendations of the board were printed upon the convening of Congress in connection with the estimates of the Secretary of the Treasury for the appropriations for the fiscal year beginning July 1, 1897.

The Carnegie of the Wilson Transit Co., Cleveland, must be a daisy freight carrier in toting along 5,600 tons of cargo on the limited draft now allowed. They say here that she is a dollar grabber.

THE CAMDEN, N. J., SHIPYARD.

The Princeton, which is to be launched at the yards of her builders, John H. Dialogue & Son, Camden, N. J., on Thursday next at 3 p. m., is a single screw composite gunboat of 1,000 tons displacement at normal draft; she is 168 feet long on water line, 204 feet long over all, 36 feet beam, and 22 feet 6 inches deep from top of keel to spar deck. The keel is East India teak, planking and decks of fine grained yellow pine; the stem, stern post and rudder frame are manganese bronze. The top side plating, floors, bulkheads, beams, etc., are mild steel, water ballast tanks are fitted in engine and boiler space and tanks for galley are in the forehold. She is an exceptionally fine lined vessel; she will be provided with full sail plan of barkentine rig. In all her details she has been designed for service in warm climates.

Her engines are of the usual triple expansion type with three cylinders working on three cranks; the H. P. cylinder is 15¼ in. diameter, I. P. cylinder 23½ in. diameter, low pressure cylinder 36 in. diameter, all 30 in. stroke. High pressure valve is of the piston type, intermediate and low pressure are slide valves. Engine will drive a 4-bladed manganese bronze propeller 10 feet diameter, the blades are adjustable on boss; the shafting is arranged so that the engines can be disconnected while she is under sail. The shafting is hollow, and with the other forgings and castings were made and machined in the builder's shops.



U. S. GUNBOAT "PRINCETON."

Steam will be supplied by two cylindrical boilers each 10 feet 6 inches diameter by 10 feet 6 inches long, each boiler will have two furnaces 36 in. diameter, total grate surface in both boilers 78 square feet, total heating surface 2,500 square feet. The shell plates of these boilers are very large, being in one plate for the whole length of boilers.

There will be the usual steam windlass and capstan, steam steering gear, steam ash hoist and a complete system of electrical communication. In the engine room will be the usual main and auxiliary feed pumps, fire and bilge pumps, evaporator, distiller and auxiliary condenser.

The accommodations for officers and crew are unusually large and convenient, most of which are on the gun deck. There is an elaborate system of ventilation to all living rooms, magazines, bunkers, etc., below the gun deck, also a complete system of drainage, fire service and plumbing all of the most modern type.

The armament for this vessel will consist of six 4-inch rapid fire guns, four 6-pounders, and two 1-pounders.

The spars, sails and rigging, coppering and outfit will be supplied at one of the navy yards.

Speed guaranteed by the builders is 12 knots per hour for 4 hours under conditions prescribed by the Secretary of the Navy.

This type boat is an especial favorite with Commodore Hichborn, the chief of the Bureau of Construction and Repair; be believes they are especially suitable for service in South American, West India and China stations, as they will be economical in use of fuel and will require practically no docking during a three years' cruise.

Besides the steamer Princeton the builders have a fair amount of other work on hand, among which is the new boiler for steam tug "Edgar F. Luckenbach," 13 feet 6 inch in diameter by 11 feet 6 inches long, having three furnaces and adapted for a working pressure of 160 pounds; a triple expansion engine and Scotch type boiler for new steam yacht for Capt. I. J. Merritt, of New York city. A new boiler is being placed in the Spanish steamer "Benito Estenger," of Santiago de Cuba, a fishing steamer is being built for the New England Fish Co., of Boston, Mass. She is a screw vessel with large sail plan, raised quarter deck, and schooner rigged; she is 135 feet long over all, 23 feet 8 inches beam and 12 feet 6 inches deep to the main deck. She has triple expansion engines 14 inches, 22 inches, and 36x24 inches stroke, boiler is of the Scotch type, 12 feet diameter, 10 feet 3 inches long, adapted for a working pressure of 160 pounds per square inch. She will have accommodations for a large crew. The middle portion of vessel is fitted with large fish boxes and ice box for storage of fish and ice.

They also have under way a new boat for the fire department of New York, she will be a steel hull, single screw vessel, having one compound engine 15 inches and 30x22 inches stroke, two Scotch boilers and two fire pumps similar to the New Yorker, she will have an unusually complete arrangement of discharge nozzles and play pipes. H. DeB. Parsons, Naval Architect, is the designer and superintending engineer.

VERIFYING POSITION.

The fact, that the position of a vessel found by compass and log cannot be depended upon, however careful all corrections are made, renders verifying position a necessity. The corrections for variation, deviation, leeway and current, especially the latter two, are always more or less in error, on account of the inability or impossibility of determining their corect values in practice. Errors may even arise from neglecting small fractions in converting degrees into points, and influence the reckoning. For instance the corrections being:

Variation	2 Degrees.	⅛ Points.
Deviation	3 "	¼ "
Leeway	6 "	½ "
Current	13 "	1⅛ "
Sum total	24 "	2 "

As 24 degrees equal 2⅛ points, there is a difference of ⅛ point in the total; and such small error in course may cause disaster, as will be seen presently.

A vessel running from Point Betsey to Chicago with an error of ⅛ point in course will near Chicago be off her course 5 miles to the right or left, and consequently strike either Grosse Point, or Calumet light, separated from one another 24 miles. The distance from Point Betsey to Chicago is 202 statute miles, to Grosse Point about 11 miles less, and to Calumet light as much more, therefore a correct log would show at Grosse Point 191 miles and at Calumet 213 miles, with the vessel on or near the beach. As it is not likely for a vessel to overrun her distance, the probability is that she will strand off Grosse Point rather than off Calumet or South Chicago, in thick weather. But, supposing the current has set her in the direction of her course 11 miles, the patent log would show 180 miles at Grosse Point and 202 miles at Calumet, and the probability of stranding at any point between the two places mentioned would nearly equal certainty. From which it appears that in thick weather a small error in course and distance over the ground may cause vessels from Point Betsey to Chicago to strand anywhere in the vicinity of the latter. It also appears that the position of a vessel by compass and log cannot be depended upon, and that verifying position is a necessity.

In clear weather it is not difficult to verify position, but in thick weather it is impossible, as lights are not visible and buoys are all placed in spots dangerous to approach even in clear weather, and so much more to be avoided in thick weather. In fact, there is no means for verifying position in thick weather, and consequently strandings are of frequent occurrence; they are so much more frequent as the desire of outdoing one another in reaching port is general.

Common prudence demands of vessels in thick weather, not to approach the shore any nearer than the depth of the safety-curve indicates, in order to avoid shoals and reefs; and to stay at the safety-curve until the weather clears up to make a port or narrow passage. But as everybody is hurried up by competition, vessels frequently violate the safe rule and consequently get stranded. Such recklessness and insecurity of vessels would not exist, if fog buoys were placed at the safety-curve for verifying position. The lack of such buoys therefore, is the principal cause of stranding, and of neglecting common prudence. Vessels sure of finding a fog buoy at the safety-curve will no longer risk life and property by searching for port or passage in thick weather; but will verify position beforehand if there is a safe means of doing it.

In the instance of Chicago, the 12 fathom line represents the safety-curve, and is nearly straight for 40 miles running SE. ½ S. magnetic, turning in an easterly direction soon after Calumet light is abreast. The safety-curve therefore, furnishes under all conditions and circumstances a reliable line of position of which only a certain point needs be known to find the exact place the ship is in. A fog buoy with two bells of different pitch placed on said line, at a point when Chicago harbor light is abreast, will give vessels in thick weather all the information necessary to safely enter port, without any risk of stranding north or south of it. The 12 fathom line once picked up, the buoy is easily found with the aid of its direction and one or two additional soundings.

The lack of this single buoy has cost vessel owners more than $100,000 in the aggregate, not to mention the loss of life due to it. It is a wonder that such simple means for preventing shipwreck has not been discovered earlier and put into practice.

The present system of buoyage may be good enough for fishing smacks, but it is wholly inadequate for vessels of thousands of tons of burden. No care, nor cunning, can prevent a vessel from being off her course on a long run. Verifying position is therefore a necessity; and in thick weather the only means for verifying position without risking life and property, are fog buoys at the safety-curve.

Chicago, June 1, 1897. JOHN MAURICE.

NEW LAKE TONNAGE.

Official numbers were granted this week by the Bureau of Navigation Treasury Department to the steam vessels Niagara of 1,952 gross tons, built by F. W. Wheeler & Co., West Bay City, and hailing from Buffalo. The Tourist, 66 tons, hailing from Grand Haven, and the Wm. McCarthy, 81 tons, hailing from Chicago.

CLAIM FOR INJURIES.

The Toledo Dock & Coal Co. has been sued for $25,000 damages by Joseph F. Schultz, a former employe. He asserts that while engaged in handling coal buckets and assisting in loading vessels, he was injured by one of the buckets falling on him. He says that his head and face were cut that he was hurt internally and that he will be a cripple for life. He asserts that the company was to blame for the accident.

WATERSPOUTS ON THE LAKES.

It is not of common occurrence to witness waterspouts on the lakes. Ocean travelers often catch sight of them and endeavor to steer clear of the spiral column as a known danger exists in coming into contact with them.

The U. S. Hydrographer, Commander J. E. Craig, U. S. Navy, in relation to waterspouts, says:

"That even a fairly good picture of a waterspout is not to be found in any publication of that office; or an illustration that does not convey an erroneous impression of this remarkable phenomenon is hardly to be found. The sketch, made for the occasion, is a fair representation of a typical waterspout seen at a distance of half a mile, where the rush and roar of the whirlwind will be distinctly audible and the vaporous base, usually pyramidal in form, within easy vision.

A waterspout may remain practically stationary during a dead calm, yet it has usually a progressive motion ranging from two or three to fifteen miles an hour according to the strength of the prevailing breeze, and entirely independent of the whirlwind, which, by its centripetal force, rends the surface water into vapor, draws it up within its vortex, as through a chimney, to a point where its force is exhausted and the vapor dissipates to the right and left forming a dense rain cloud.

The general features of a waterspout are subject to rapid and continuous changes; the funnel constantly sways with a sinuous motion, rapidly expanding and contracting, while the base, with equal rapidity, assumes various shapes, sometimes taking on a columnar form, with the lower extremity of the funnel tapering to a point where it may be dimly seen within its misty surroundings.

Solid water is probably never drawn up, and the base always has the appearance of escaping steam, more or less dense. The funnel is always darker than the base and increases in density as it approaches the overhanging cloud."

Mr. C. S. Martin, editor of the Times, Oswego, N. Y., kindly furnishes us with a description of some waterspouts recently seen off that port from which we take the following:

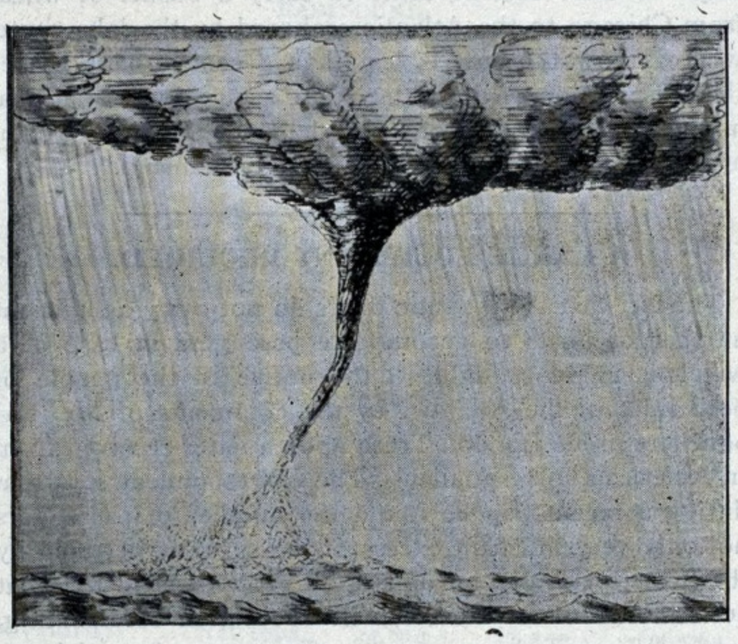
"Waterspouts are not frequently seen on the Great Lakes, especially on Lake Ontario. Over thirty years ago three passed down the lake one Sunday afternoon, but none have been seen since that we have heard of. The oldest sailors, men who have followed the lakes since they were boys, cannot remember of having met with any of these terrors to shipping which engulf large boats upon the broad expanse of the ocean. Within an hour four of these meteors recently passed by this port. Three burst when a short distance to the eastward, but the fourth, the largest and most terrific, sped down the lake at race horse speed, holding itself intact until lost sight of by persons who were watching it closely wtih marine glasses.

"When the morning dawned the sky was overcast by dark, forbidding clouds which denoted both wind and rain. The clouds over the lake were especially black and dangerous looking. A strong wind was blowing from the northwest, making a nasty, choppy sea. Suddenly out of the western horizon there could be seen sweeping down the lake a conical shaped column. It looked like a huge serpent, twisting and revolving with the rapidity of lightning. This column reached from the dark, overhanging clouds to the surface of the lake. As it approached off this port it was seen to be five or six miles in the lake. As it whirled along it seemed to pick up large volumes of water and whirl it into the air. The water at its base was churned into a cauldron. When a mile or two below this port it burst. As it did so a vivid flash of lightning came out of the east and a thousand tons of water which had been taken from the lake fell back, causing a mighty swell which rolled shoreward. No sooner had this strange phenomenon disappeared than another was seen following in its course. It was larger than the first and agitated the water more violently. It, too, broke at about the same place as did the former. There was a wait of perhaps half an hour when one of the grandest and most awe inspiring sights ever witnessed on the lakes was seen. Two of these whirling, writhing columns standing obliquely from the lake to the sky were seen coming down the lake. They were both larger than the two which had preceded them and they raised a mountainous sea along their course. They were as black as black could be. On they came picking up thousands of tons of water and whirling it into the air as if it was the lightest of feathers. The outside of the conical columns was one whirling black mass. Through the center could be seen a white streak like a vacuum through which the water was being drawn from the lake to the clouds in a steady stream. These waterspouts were out between six and seven miles in the lake the smaller one burst, but the large one remained intact and was whirled down the lake toward the mouth of the St. Lawrence River, keeping intact until lost sight of.

These wonderful formations of vapor and water are dreaded by seafaring men, for a vessel, no matter how staunch she may be is but a plaything in the power of a well developed waterspout. The largest which passed this port was apparently between seventy-five and one hundred feet in diameter at the bottom and had it struck a vessel would have sent her to the bottom. On the oceans where waterspouts are frequently met with the officers of ship understand a remedy which generally proves effective. When it is seen that it will be impossible for a ship to steer out of the course of these destructive volumns a cannon is loaded and pointed toward the waterspouts and fired. The concussion usually succeeds in causing the column to burst and many ships and lives have been saved in this manner.

"Zell's Encyclopedia" says:

Waterspout—A phenomenon which in its general appearance may be described as follows: From a dense cloud a conical pillar, which appears to consist of condensed vapor is seen to descend with the apex downward. When over the sea there are usually two cones, one projecting from the cloud and the other from the water below it. These sometimes unite and the junction has been observed to be accompanied with a flash of lightning, but more frequently they disperse before the junction. In



WATERSPOUT.

calm weather the column maintains its vertical position while carried along the surface; but when acted on by the wind it becomes oblique to the horizon. The causes of this meteor are very imperfectly known. By some it is supposed to be framed by a whirlwind of extreme intensity. while others ascribe it to an electric origin. It occurs for the most part at sea, but sometimes also on shore, though generally in the neighborhood of water."

In Mr. Martin's communication to The Record he says that on three subsequent occasions waterspouts have passed that port. The first time recorded no less than three, the second time two, and later, one.

There is no doubt some reason for waterspouts being prevalent at the outlet of Lake Ontario and so that the effect may be traced to cause we take pleasure in pointing out the phenomenon.

LAUNCH OF THE ATHENS.

The launch of the schooner Athens took place at Davidson's shipyard, West Bay City, on Friday afternoon. The launch struck the water on an even keel and presented a very pretty sight.

The Athens is strongly and substantially constructed throughout, having double steel keels on plates, double steel arches and steel cords, and is diagonally strapped as well. She has three spars, and when launched her rigging and sails were in place, her anchors at the hawse pipe, and all equipment on board. The Athens is fitted out with all of the latest improved appliances pony boiler located forward, built by the Wicks Bros., of Saginaw. She is also supplied with steam deck hoists, windlass steam pumps and syphon forward.

The Athens is of fine model and all of the cabins are in hardwood finish. Her capacity is 130,000 bushels of wheat on the Sault draft. She has received the highest class in the Register, of New York city, and she also has been classed A1* in the Inlands Lloyd's insurance register.

SUIT FOR COLLIDING.

The libel of the steamer Florida against the steamer George W. Roby—which sunk her in collision in Thunder Bay a few days ago—together with her consort, the W. D. Becker, was filed in the United States Court this week, by John C. Shaw and W. B. Cady, attorneys for the former steamer. The amount of damages is claimed to be $80,000 for the steamer, $2,000 freight, $43,000 for the 56,000 bushels of wheat, $32,000 for 633 tons of flour and general cargo and $1,400 for the loss of personal effects of officers and crew. The aggregate amount of damage sustained by the insurance companies and sued for by the libellants as owners of the vessel and trustees for the owners of the cargo, the charterer thereof, the underwriters on hull and cargo and her officers and crew is $172,400.

The libel papers say that the Florida, a stanch vessel, was on her way from Chicago to Buffalo; that at about 8:45 o'clock the morning of May 20, the time of the collision, she was in every particular obeying the rules of navigation; that she was in nowise at fault; that a heavy fog was on; that after passing Presque Isle the Florida took a course a little to the east of the chart course, changing it only on receiving a signal from the Roby; that the Florida proceeded on the course under a slow, checked speed, continually sounding the fog signals as required by law, with a close watch maintained; that a passing signal of two whistles was heard from the Roby, seeming to come from a little forward and a little to the starboard of the Florida, and not far away. The Florida put her wheel to starboard and answered with two whistles, which was answered by the Roby.

Soon thereafter a checking signal and a reversing signal in quick succession were heard from the Roby, as the latter came into view through the fog. The Roby was then close to the Florida, going at apparently full speed and heading to the starboard side of the latter. The Florida had commenced to swing under a starboard helm immediately after the first exchange of signals, and continued to so swing until struck by the Roby; but the latter, as she came into view of those on the Florida, was not swinging under such helm, and evidently had not altered her course as required under her starboard signal. The Roby was hailed to starboard her helm, but instead of doing so she came on at great speed, and crashed stem on into the starboard side of the Florida, striking the latter a little abaft of amidships and causing her to sink within a short time.

The Florida's owners claim that at no time were any fog signals heard from a bell, as is required from schooners being towed; that prior to the collision no fog signals of any kind—so that the location and course of such tow could not be calculated and determined—were heard from either the steamer or her consort; that the fog and passing signals of the Florida were all given by loud and distinct blasts of a good and sufficient steam whistle; that a watch on the Roby should have heard the Florida's fog whistles and thus have located her a long time prior to the time they blew their first two-blast signal on the Florida; that though it was thick and foggy at the time the conditions were favorable for sounds to be heard a long distance.

The Roby will probably be appraised, but in this case it cannot be for more than the value of the Roby, which will be fixed by the appraisers, and which will be much less than the amount of damages claimed. According to an agreement made between the opposing attorneys the Roby has up to the present time been allowed to proceed unmolested.

Beginning June 15 the D. & C. boats will make double trips each week day. A special excursion fare will be announced for these trips. This means a morning boat and a night boat, arriving and leaving this port. The summer season is supposed to open at the middle of June. While the season has been slow thus far for all owners of passenger boats, it is thought that travel will be heavy enough at the opening of warm weather to make up for the backwardness.

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LAKE LEVELS.

The Record has consistently advocated the preservation of lake levels during the past eighteen years. We also strenuously opposed the second Niagara or drain from the lakes as now proven by the formation of the Chicago sewer or drainage canal. It now appears that our views of the loss to lake levels is appreciated down East, as the Philadelphia Press this week says: "Reports from the great fresh water lakes are to the effect that their level is much above what it was last year at this season. Fishermen on Lake Ontario, for instance, claim that the water of that lake is 18 inches higher than it was in May, 1896, and three feet above the level of last summer. This increased volume of water is doubtless due to the melting of the great body of snow which fell last winter on the drainage area of these basins and to the abundant rains of the spring. The same heavy precipitation elsewhere has caused the greatest floods in the Mississippi River that this generation has known.

"Two years ago, in 1895, the level of the lakes was extraordinary low and much apprehension was felt lest a permanent change had taken place and that hereafter a lower level of water would be the rule. This condition, however, was easily attributable to the dryness of the season, a much smaller quantity of water having fallen over the drainage area than the average. The level of the lakes is known to oscillate from year to year, but there is no trustworthy data on which to base calculation in the matter. The conditions are constantly changing also. A larger area of land is being brought under cultivation which absorbs more rainfall and consequently less runs off into the creeks and streams which help feed the lakes. More forests are also cut down and a larger surface exposed to evaporation from the sun.

"The meteorological cause for changing lake levels and the causes which come from an increasing population will doubtless continue and cannot probably be controlled. But there are artificial cuases which are likely to influence lake levels seriously unless care is taken to regulate and check them. Among these causes are the Chicago drainage canal, the project for cutting a ship canal between Lakes Erie and St. Clair, and the plan of cutting a 14-foot channel throughout the whole length of the St. Lawrence River. There are other schemes, but these are the most important. The Chicago drainage canal will as soon as finished take 300,000 cubic feet of water per minute from Lake Michigan and ultimately double that amount. The ship canal between Lakes St. Clair and Erie as projected will be 21 feet deep and 72 feet wide at the bottom and to supply it will require an additional drainage of water from Lakes Huron and Michigan and consequently from Lake Superior. The enlargement of the Welland Canal has already had some effect in lowering the level of Lake Erie and if the channel of the St. Lawrence River is deepened so as to admit larger steamers and more of them to the lake trade an increased demand will be made for water from the lakes and a further decline in the levels of both Lakes Erie and Ontario is probable.

"This constant drainage cannot go on without materially lowering the level of water in every one of the great chain of lakes. But as commerce demands this drainage it will probably continue, and the question is whether the harm done can be counteracted in any practicable manner. The only feasible plan is the one proposed of erecting dams at the outlets of the great lakes and so keeping the levels at the desired height. This plan has been suggested many times and was seriously considered in 1895 when the low water in the lakes made some of the harbors almost inaccessible. Another argument in its favor is the constantly increasing size of lake steamers which require a greater depth of water. The plan is intelligently discussed by W. A. Jones in the May number of the Engineering Magazine, who 'would occupy the outlet of Lakes Superior, Huron, Erie and Ontario with great dams having ample discharge capacity controlled by movable gates.' Eminent engineers have declared the idea entirely practicable.

"That scrupulous care must be taken to preserve the lake route of commerce is clear to every one who understands the immensity of the traffic which passes that way. That commerce amounted in 1895 to about 45,000,000 tons valued at $640,000,000 and it is constantly increasing. The value of the lake route is shown in another way. It once cost 26 cents to carry a bushel of wheat from Chicago to the Atlantic seaboard by the lake route, whereas now the cost is less than 8 cents. This makes the preservation of the water route a question of national moment, the treatment of which demands the highest technical skill and the most far-seeing statesmanship."

A LARGE EQUIPMENT REQUIRED.

The fact that the Atlantic liners do not carry a sufficient number of boats to accomodate pasengers in case of a wreck is again brought to the notice of the people of both sides of the Atlantic, by the comments of Mr. Labouchere in his London Truth upon a letter received from an American correspondent. The correspondent says that during a recent trip he found the number of passengers not only very much in excess of the capacity certified by the Board of Trade, but out of all proportion to the boat accommodation of the steamer. Truth, in commenting, says: "Even if there were a sufficient number of boats the chances of safely transferring 2,000 people in a sudden emergency is extremely remote. It looks as though the occurrence of some gigantic catastrophe were only a question of time."

It is not necessary to wait for a great calamity to awaken officials to the responsibilities and duties of their position. The catastrophies of last year and the year before are fresh in the memories of the people, and ocean travelers will be apt to make a stir about the complaint of the American correspondent and take notice of the comments of Truth in a way that will bring about a permanent reform. If the liners disregard the safety of passengers the steamers of lesser note will be very apt to follow the dangerous example.

It is not necessary that another steamer should be towed along so that in the event of an accident happening to one, passengers could board the other. Furthermore, no steamer can be cumbered with too many boats, at least, not so many as would accommodate her full passenger list, hence, we come down to the life raft and life belt equipment, which after all, is a very unsatisfactory way of leaving a ship. There is a growing feeling that other modes should be devised for the care of passengers' lives in the event of a casualty, and that a portion of the steamer's ordinary equipment should be used as adequate life-saving devices when it was found necessary to desert the vessel. We hope to see some appliances of this kind placed on the larger passenger steamers and so that each person may be given a chance for their lives in some better form than a life belt offers.

CANADIAN FISHERIES.

The aCnadian Department of Fisheries, in its annual report to the Canadian Parliament, values the fisheries of the Dominion for the year 1896 at $20,199,338. These figures are a decrease of more than half a million dollars under the valuation for the preceding year. Throughout the Dominion there were engaged in the fishing industry 71,334 men who acted either as fishermen or as sailors on the 1,200 schooners and steam tugs employed in the business. Of fishing boats the aggregate is 34,268. On the side of the Province of Ontario 83 tugs were employed last year and 1,346 boats, furnishing employment to 3,000 men. The fishing waters of the United States are of course equal in extent to those of Canada on the frontier along the Great Lakes, and also include Lake Michigan. The industry is prosecuted on our own side of the line even more vigorously than in Canada. With our increased area we derive a corresponding advantage over Canada in the annual catch and in the number of men employed.

RULES OF THE ROAD.

This week the house took up and passed the Frye bill "to prevent collisions in harbors, rivers, and inland waters of the United States." It was passed by the Senate May 6.

Although the title of the bill mentions the "inland waters of the United States" it has nothing to do with the great lakes and their connecting and tributary waters as far east as Montreal, or the rivers emptying into the Gulf of Mexico and their tributaries, these waters being specially excepted by the first clause of the bill.

In reporting the bill to the senate a month ago, Senator Frye frankly said that he did not understand the matter at all and he did not believe any Senator understood it better than he did, but felt there was no question about its being entirely right.

The explanation given was that a maritime congress about six years ago met in the United States and agreed upon certain rules to prevent collisions at sea, which have finally been adopted by every maritime nation and will take effect in the United States, by proclamation of the president on the first of next July. The lakes and rivers were excepted, because the conditions there are such as to require their own special code. But there was a difference between the rules established for the ocean and the rule established for the "inland waters" of the coast, such as Chesapeake Bay, Delaware Bay and New York harbor. To prevent confusion it was necessary that the rules should correspond and the American delegates to the maritime conference, with the assistance of two leading admiralty lawyers, drew up a set of rules for both inland and salt waters, to correspond as near as it is practicable to make them, and these have been embodied in the bill which now goes to the president. As he probably understands the matter no better than the chairman of the senate committee on commerce, but is also satisfied it is "entirely right," the bill will become law.

GRATWICK-SUNRISE COLLISION.

Judge Grosscup at Chicago has decided the case of the collision between the whaleback consort of the steamer Gratwick No. 2 and the schooner Sunrise, by dividing the damage. One day in May, 1896, the Gratwick and consort were off Racine, bound up, in a dense fog. Owing to this condition they were under only enough headway to give them steerage way. This is the custom at that end of Lake Michigan in a fog, owing to the presence of many lumber schooners which ply back and forth across the lake. On both boats was heard a schooner's horn to leeward, or the Wisconsin side, but soon this horn passed out of hearing. Half an hour later the schooner Sunrise struck her jibboom across the bow of the consort, which crashed into her and sunk her.

The argument against the Sunrise was that as she was coming down the lake with a fair wind, she should have judged that the steamer had a consort and governed her course accordingly; that, according to the law, three blasts refer to a towing steamer as well as to a single one; that if she had put her helm up and fallen off a point or two she would have escaped.

In this connection the remark is pertinent that steam must always give way to and avoid vessels under sail. The consort or tow-barge is usually considered as being a part of the steamer, as she has the speed, direction and is under the complete control of the latter.

GENERAL AVERAGE CLAIMS.

The United States Supreme Court has just rendered a decision in the case of the owners of the barges Eldorado, George W. Wesley and Bay City against the owners of the steamer J. B. Donaldson, which has been fought in the different courts for seventeen years. The court held that when a steamer is compelled to desert her tow in a storm for self-preservation she cannot be held liable for any general average loss sustained by the tow.

In November, 1880, the steamer J. B. Donaldson left Buffalo with three barges in tow, the Eldorado, George W. Wesley and Bay City. A storm was encountered on Lake Erie and despite the efforts of the steamer she and her tows were being rapidly driven toward the south shore of the lake. The steamer attempted to make Erie for shelter, but at a point below that port it became evident that she could not take the barges into the harbor and as a last resort the tow-line was cut. Thus the barges were driven ashore while the steamer reached Erie safely.

Suit was begun at Detroit by the owners of the barges to recover damages, which in the aggregate were fixed at about $20,000 and the case was heard before Justice Brown, of the Supreme Court, who was then a United State District judge. The owners of the barges claimed that the steamer was negligent in not keeping the vessels off the shore, and that if not negligent then, having sacrificed the tows for her own safety, she was at least liable to make contribution in the general average the same as if she had jettisoned her cargo to save herself. Justice Brown decided that there was no neglect, and also ruled adversely in the claim for general average. The case was appealed to the United States Circuit Court, and heard before the late Justice Matthews, who affirmed the decision of the district court as to the question of negligence, but reversed on the other ground, and held that the owners of the barges were entitled to a general average. Finally the case was appealed by the owners of the Donaldson to the United States Circuit Court of Appeals at Cincinnati, but this court, on account of the peculiarity of the decision of the circuit judge, deemed it advisable to have the matter determined by the Supreme Court, and certified, as the question, whether there should be a general average contribution between the owners of the steamer and her tows under the circumstances mentioned. The Supreme Court decided the question in the negative, reversing the decision of Judge Matthews, and affirming the original decision of Judge Brown, that the law of general average is confined to such cases where a voluntary sacrifice is made of some portion of the ship or cargo for the benefit of the residue, and has no application to a contract for towage.

CONFLICTING EVIDENCE.

In the collision case of the steamer Grand Traverse, of the Lackawanna line, against the steamer Livingstone, of Detroit, each side makes directly contrary charges. The Grand Traverse was bound up from Buffalo to Green Bay with a miscellaneous cargo, and the Livingstone down with grain. The collision occurred on the morning of October 19 last, two miles to the northwest of Colchester light, Lake Erie. First Mate William McDonald, in charge of the Grand Traverse, testifies that he blew one blast to the Livingstone. He saw the Livingstone's red and green lights and two range lights, and judged her to be a quarter of a point on the port bow. After blowing one blast McDonald ported his helm half a point, and when within a mile or three-fourths of the Livingstone, blew another blast. Neither was answered. At the second he saw only the red and range lights of the Livingstone, three-quarters of a point on the port bow.

When the Livingstone was three-fourths of a mile away McDonald blew a third blast, which was not answered, and ported still further. The mate then observed the Livingstone swinging toward him, and so close that he could see no way of clearing her except by letting his vessel go as she was. Then the crash came, the Livingstone going head on into the Grand Traverse, striking her amidships. The Grand Traverse was going eight and a half miles an hour. He says that when the other was thirty feet away he could hear his engine signal, but there was no change in her speed. The collision appeared to be directly at right angles.

First Mate William McAlpin, in charge of the Livingstone at the time of the collision, testifies that the night was clear with no moon; that when the lights of the Grand Traverse were first sighted she was four or five miles away; that the masthead light of the other bore a quarter to half a point on his starboard bow; that he next saw her green light; that when they were a mile apart the starboard half a point; that she was still on his starboard bow, showing the green and head lights; that he had heard no signals from her; that he blew none himself; that if neither had changed her course from that time on they would have passed to the starboard of each other by 1,000 feet; that when the boats were 1,000 or 1,500 feet apart he heard one whistle from the other; the Grand Traverse showing a green and headlight; that he then stopped the engine and reversed; that he gave no order to the wheelsman; that the Grand Traverse seemed to put her wheel hard to port and come right across his bow, as he could see her swing; that soon the green light disappeared, and he could see only her head light; that the speed of the Livingstone was reduced from eleven miles to five miles an hour. Then the boats came together, the Grand Traverse's engine all the time working.

The claim for damages put in by the Lackawanna Line is about $75,000, of which $40,000 is for the steamer, which is a total loss. H. D. Goulder, of Cleveland, represents the Grand Traverse, and C. E. Kremer, of Chicago, the Livingstone. The case is being tried before the United States District Court for the Northern New York district.

CANAL TRAFFIC.

OFFICIAL REPORT OF FREIGHT AND PASSENGER TRAFFIC TO AND FROM LAKE SUPERIOR FOR THE MONTH OF MAY, 1897, INCLUDING STATISTICS OF THE UNITED STATES AND CANADIAN CANALS AT SAULT STE. MARIE, MICHIGAN AND ONTARIO.

EASTBOUND.

ITEMS.	U. S. Canal.	Canadian Canal.	Total.
Copper.....Net tons	19,147		19,147
Grain.....Bushels	2,265,012	323,285	2,588,297
Building Stone...Net tons			
Flour.....Barrels	977,521	101,674	1,079,195
Iron Ore.....Net tons	712,619	174,941	887,560
Iron, Pig.....Net tons			
Lumber.....M. ft. B. M.	104,673	791	105,464
Silver Ore.....Net tons			
Wheat.....Bushels	6,830,687	2,405,413	9,236,100
Uuclassed Freight Net tons	23,071	7,734	30,805
Passengers.....Number	387	192	579

WESTBOUND.

ITEMS.	U. S. Canal.	Canadian Canal.	Total.
Coal (Hard).....Net tons	24,814	11,250	36,064
Coal (Soft).....Net tons	242,034	47,981	290,015
Flour.....Barrels			
Grain.....Bushels			
Manufact'd Iron..Net tons	18,181		18,181
Salt.....Barrels	46,335		46,335
Unclassed Freight Net tons	41,418	2,137	43,555
Passengers.....Number	698	81	779

East-Bound Freight, Net tons	1,610,765
West-Bound Freight, Net tons	394,687
Total	2,005,452
Total Craft—United States	1,605
Total Craft—Canadian	383
Total	1,988
Total Registered Tonnage—United States	1,694,489
Total Registered Tonnage—Canadian	294,739
Total	1,989,228

LOWERING ELEVATOR CHARGES.

The grain trade is having a foretaste of the coming war on the great elevator pool at Buffalo, and both shippers and vessel men like it. The Raymond elevator, which has been cutting the pool rates for the transfer of grain from ⅞ to ⅜ of a cent a bushel, is the most prominent factor in the trade. New York grain men are ordering shipments through the Raymond whenever possible. Of late vessels have been given good dispatch at the Raymond, and vesselmen, who receive an eighth of a cent more on many cargoes than they would if it were not for the cut in the transfer charges at Buffalo, are not adverse to accepting the grain for the smaller class of vessels. Experience is showing that vessels will share in the gain to be made in the reduction of Buffalo elevator charges, which are certain to follow the opening of the great Armour elevator at that point. So leading a factor has the Raymond become in the trade at Chicago, that quotations are being made of freight rates, with the Raymond transfer as the basis, and for a time this week it was not possible to charter vessels at 1¼ cents, to take corn except to the Raymond.

LAKE FREIGHTS.

While there is but little change to report in the lake freight market there is a much better feeling relative to an increase in rates as well as the volume of cargo to be transported.

There are still quite a number of boats that have not fitted out for the season's work, but these are chiefly small vessels and of inferior grades or class so that the item of insurance cuts quite a figure with such tonnage and they must receive fair living freights if they are to sail at all.

There is no present improvement to be recorded in Chicago grain rates, in fact, 1 cent on corn to Lake Erie has been mentioned, with a suspicion that this miserably low rate has been quietly accepted in some quarters, though 1⅛ cents are the ruling and quotable figures.

Coal is moving in large quantities from Buffalo and Ohio ports at last week's rates, viz: 20 cents, Lakes Superior or Michigan.

In iron ore there has been a decided activity during the week and some rather important sales are reported there, being an advance of $1 in pig iron billets during the week.

The proposition of the fee owners, W. R. Burt, Ezra Rust and others, to Rockefeller to cut royalties 33 1-3 per cent, and freight rates 25 per cent on the Mesaba range, will not be accepted, says the Duluth Herald. The Duluth, Mesaba & Northern Railroad would lose 20 cents per ton, or a revenue of $400,000, by the agreement. The royalties would be cut 10 cents per ton on ores taken from the few leased mines. The gain would be insignificant compared with the loss. The fee owners also wanted a term in the lease requiring all grades of ore to be taken out as they came from the mine, the existing contract permitting the mining company to select which grades shall be mined, leaving the others untouched.

RECEIVERS OF WRECKS -- BEACHCOMBING.

It may not be generally known, that some of the residents of the lake shore districts earn many a dollar in the course of a year by picking up lumber washed ashore from schooners unfortunate enough to be out in gales, says the Grand Haven Tribune. One young fellow living south of town picked up enough lumber in a few days last year to clear him $200. These beachcombers watch the lake patiently in every gale and have vantage towers from which to watch for traces of lumber, railroad ties or wreckage. Sometimes they see a deckload washed off from a schooner far out in the lake and in a few minutes they are hard at work picking up the deck cargo as it comes ashore. In one batch last year one wrecking firm picked up 18,000 feet of lumber and a few years ago 60,000 feet was picked up in one bunch near Rosy Mound. This is all clear gain to the beachcombers, as it is very seldom claimed. Years ago, old settlers say that the lake shore was piled high with wreckage of all kinds, and at the lake shore farms could be seen great piles of the finest kind of lumber, that had been picked up. The beach now is kept clear of wreckage and everything that comes ashore is at once taken possession of.

In view of the foregoing statement, the Record would again like to mention that owners, shippers, consignees, underwriters and others are financially concerned in seeing that those appointed as receivers of wreckage should attend to their duty and have every possible assistance given them in doing so.

TRADE LITERATURE.

The firm of Jenkins Bros., manufacturers of packing, 71 John street, New York, have just issued an 80-page illustrated catalogue of their specialties. On the inside of the front cover we notice a fair and frank statement from the manufacturers to the effect that if a Jenkins Bros.' valve is put on the worst place, where other valves cannot be kept tight, they will accept a return of the said valve and refund its cost if not perfectly tight and satisfactory.

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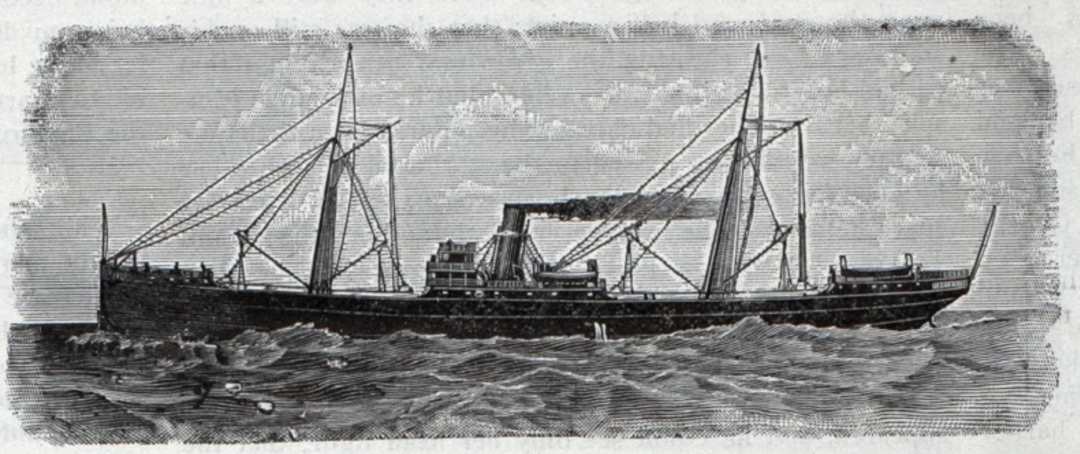

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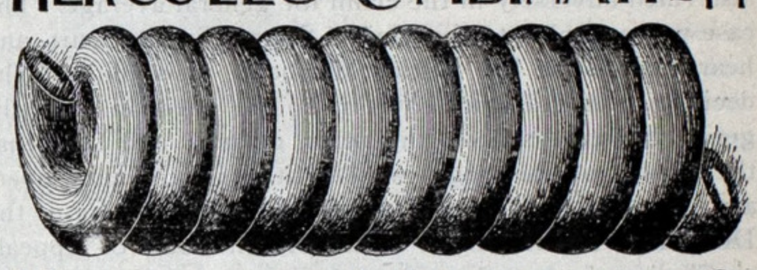

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PRACTICAL METHOD FOR FINDING COMPASS ERRORS.

ARRANGED FOR MASTERS AND PILOTS ON THE GREAT LAKES

BY JOHN ROSS LATE MASTER LIGHT-HOUSE TENDER 9TH. DISTRICT.

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CHAPTER III.

VARIATION.

Every navigator is aware that the compass rarely points to the true geographic north. This is due to as many as three causes: Variation, (also called declination of the magnetic needle or magnetic declination), caused by the earth's magnetism; deviation, caused by the magnetism in the ship; and local attraction, caused by large magnetized bodies close to the ship, such as piles of ore or iron, iron or steel ships, or other structures of iron or steel.

Variation is what the compass needle, when it is not influenced by deviation or local attraction, lacks of pointing to the true north. On the earth's surface there are lines, of meridians, on which the compass, if not influenced by deviation or local attraction, points to the true north; these are known as the magnetic meridians of no variation. On the Lakes one of these meridians passes near Toledo, crosses the western end of the Straits of Mackinac, near Waugoshance Light-House to a point near Epoufette, on the northern shore, and crosses Lake Superior in a general north direction from the life-saving station, fifteen miles to the eastward of Grand Marais harbor to Otter Cove on the north shore, and passing about five miles to the westward of Caribou and Michipicoten Islands.

A compass, if not influenced by iron in the vessel or near the vessel, will point to the true north when anywhere on this line; but if the compass is to the eastward of this line the north point will be drawn to the westward of the true north and toward the magnetic north, or, in other words, the compass will have westerly variation. If the compass is to the westward of the magnetic meridian or no variation, the north point will be drawn to the eastward of the true north and toward the magnetic north, and the compass will have easterly variation. On the Lakes the farther eastward you go from the meridian of no variation the greater will be the westerly variation; it is ten degrees, more than seven-eighth point, at Ogdensburg. The farther westward you go from the meredian of no variation, the greater will be the easterly variation; at Duluth it is eight degrees or three-fourth point. The Pilot Chart, published by the U. S. Hydrographic Office, shows the magnetic meridians for every degree of equal variation on the Great Lakes. The Lake navigator can see on this chart how many degrees westerly or easterly variation he will have in any locality. It will also be seen on the chart that the variation changes as the vessel moves east or west through the Lakes, but that in any one locality it does not change more than four minutes (one-fifteenth degree, an inappreciable quantity for purposes of navigation), in one year

No compensation by magnets on board ship can be made for the variation as the magnetic force which causes it is outside of the ship.

Some writers have combined the terms variation and deviation in one term, "compass error" or "total error." As variation is caused by the earth's magnetism, and the compass, if not influenced by deviation or local attraction, always points to the magnetic north, "this definition conveys an altogether wrong idea of what the compass ought to do, and is not in any respect convenient."*

DEVIATION.

Deviation, or the Compass Error, is what the north point of the compass lacks of pointing to the magnetic north and is caused by the magnetism in the iron and steel in ships The amount of the deviation varies on different headings of the vessel; this is due to the magnetic forces changing their lines of direction relative to the compass needle A simple example will illustrate what is meant: Suppose the attractive force to be near the bows, forward of the compass on a vessel, when the vessel is heading north the force of the ship acting with the earth's magnetism, does not affect the compass as much as if the vessel heads east; in the latter case the attractive force near the bow is at right angles to the compass needle and draws the north point of the needle to the right If the vessel's head is changed to west the attractive force near the bow will draw the north point of the compass to the left

If the vessel's magnetism draws the north point of the compass to the right, or eastward of the magnetic north, it is called easterly deviation, and if the vessel's magnetism draws the north point of the compass to the left, or westward of the magnetic north, it is called westerly deviation In some iron and steel vessels the deviation on certain headings is so large as to make the compass practically useless for purposes of navigation until it has been compensated

The deviation in iron and steel vessels are affected by the heeling of the vessel* A vessel while on an even keel on a certain heading has the magnetic force under the compass acting in one way on the compass needle, but if the vessel be heeled to starboard or port the direction of this force may be changed so as to greatly affect the needle. "This heeling error has been known to amount to as much as 2 degrees for every 1 degree of heel." The greatest heeling error is found when the vessel is heading north or south and the least when she is heading east or west. The heeling error is proportional to the amount of heel of the vessel.

*Sir W. Thompson and Capt. Lecky.

*Undoubtedly many of the unexplained vagaries of the compass needle, on board vessels on the Great Lakes, in heavy weather are due to the heeling error.—Author.

Vessels on the Lakes are usually on an even keel, but there are times when with a beam sea the vessel rolls 12 degrees or more to leeward and 8 degrees or more to windward giving the vessel say 4 degrees heel to leeward; if the compass has not been compensated for the heeling error this may mean as much as 1-2 point of error on the course which the vessel is making

The effect of the heeling error also tends to produce an oscillation in the compass card when the vessel is rolling deeply; the directive force of the needle is often wrongly blamed for this unsteadiness of the compass card. It will be noticed in vessels which have compasses that are not compensated for the heeling error that when rolling deeply the compass card will oscillate more on northerly and southerly courses than on easterly or westerly ones. It will be seen from the foregoing that the compensation for heeling error is very important and should not be neglected. In most vessels, but not all, the heeling error will draw the vessel to windward while on northerly courses and to leeward on southerly courses. The exceptions to this rule are rare. The deviations or errors found when swinging ship cannot be combined with the heeling error, each must be treated separately.

The causes which operate to change the deviation are: Loss or gain of magnetism in the compass needle; change in the magnetic force in the iron or steel used in the construction of the vessel; change in the position of iron or steel near the compass; the cargo, when of iron, steel, or other magnetic substance; local attraction (the latter operates so seldom that it can hardly be taken into account). It may safely be assumed that when an iron or steel steamer makes a number of trips without cargo that the vibration caused by her engines and the revolutions of her screw will somewhat change the magnetism of the vessel. The shocks of loading iron ore through chutes from high pockets must also have some effect on the vessel's magnetism, especially when often repeated, as is the case with steamers in the ore trade.

(To be continued.)

VISIBLE SUPPLY OF GRAIN

As compiled for The Marine Record by George F. Stone, Secretary Chicago Board of Trade.

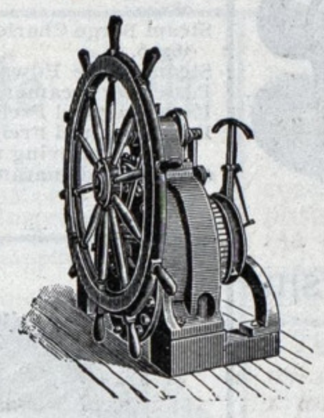
Cities Where Stored.	Wheat, Bushels.	Corn, Bushels	Oats, Bushels.	Rye, Bushels	Barley, Bushels.
Albany	.....	20,000	30,000	.....	.....
Baltimore	367,000	645,000	110,000	101,000	.....
Boston	247,000	828,000	244,000	1,000	22,000
Buffalo	879,000	426,000	1,171,000	63,000	290,000
" afloat	.....	.....	.....	.....	.....
Chicago	5,041,000	6,819,000	1,833,000	703,000	33,000
" afloat	.....	.....	.....	.....	.....
Cincinnati	1,000	2,000	9,000	.....	2,000
Detroit	33,000	14,000	6,000	17,000	.....
" afloat	.....	.....	.....	.....	.....
Duluth and Superior	2,608,000	8,000	872,000	372,000	331,000
" afloat	.....	.....	.....	.....	.....
Indianapolis	21,000	104,000	.....	.....	.....
Kansas City	146,000	164,000	165,000	6,000	.....
Milwaukee	155,000	3,000	2,000	298,000	67,000
" afloat	.....	.....	.....	.....	.....
Minneapolis	11,060,000	70,000	187,000	16,000	3,000
Montreal	353,000	15,000	573,000	34,000	40,000
New York	1,087,000	1,366,000	1,745,000	410,000	81,000
" afloat	56,000	74,000	12,000	42,000	29,000
Oswego	.....	17,000	.....	.....	27,000
Peoria	.....	4,000	46,000	.....	.....
Philadelphia	107,000	215,000	109,000	.....	.....
St. Louis	169,000	270,000	85,000	8,000	.....
" afloat	.....	.....	.....	.....	.....
Toledo	581,000	261,000	52,000	66,000	.....
" afloat	.....	.....	.....	.....	.....
Toronto	98,000	.....	40,000	.....	26,000
On Canal	523,000	601,000	231,000	115,000	231,000
On Lakes	918,000	2,062,000	1,883,000	90,000	175,000
On Mississippi	.....	12,000	24,000	.....	.....
Grand Total	24,450,000	14,000,000	9,429,000	2,343,000	1,357,000
Corresponding Date 1896	50,147,000	9,867,000	8,315,000	1,547,000	802,000

THE HOSPITAL FUND AGAIN.

We have just got clear of our forty cent tax each month for hospital expenses, when another measure is being agitated, this time, on the other side of the pond. A British shipmaster desires to promote a pension fund for the benefit of old, infirm and disabled seamen. "My proposal," he says, "for the formation and up-keep of the fund is that the government should tax every shipowner according to the number of seamen of all grades he employs, the shipowner in his turn deducting an amount equal to the tax from their employes' wages, regulating the deductions according to the different grades. Thus, a captain would contribute more than a seaman; a chief engineer more than a fireman. These, again, would draw their pension at the same ratio." He predicts that his scheme, if once started, would become one of the greatest instituions of the country. It is certainly worthy of attention, although this is somewhat more in the nature of a superannuation fund than the former tax for hospital dues, yet it is no more than the "wards of the nation" are entitled to, after ending their career in the service of the country.

It may furthermore be argued that the merchant service is of as much importance to the nation as a naval body, in fact, one engenders the other, hence the cause of duly protecting the former.

Queen City Hydraulic Steerer.



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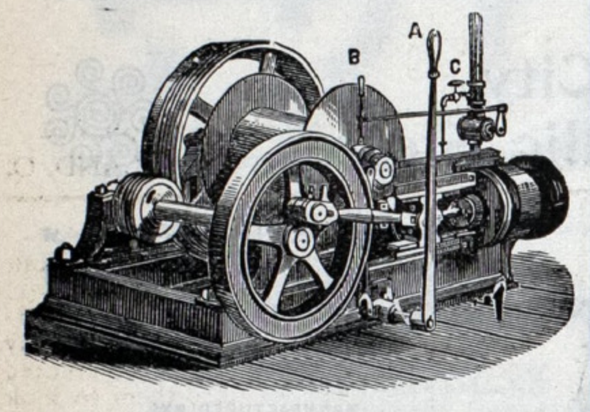

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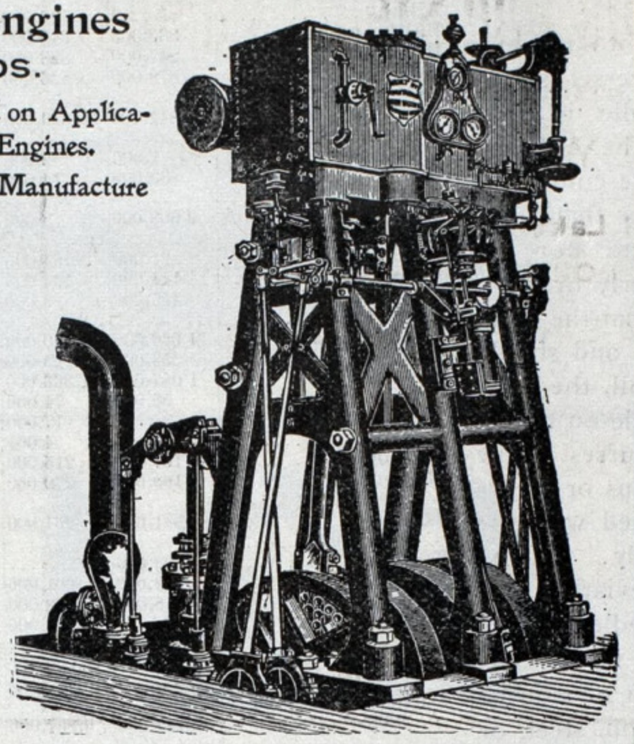

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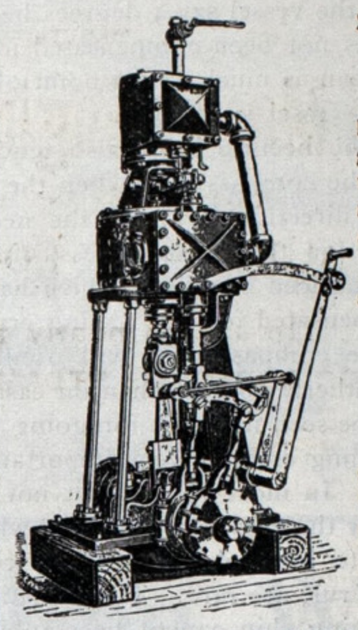

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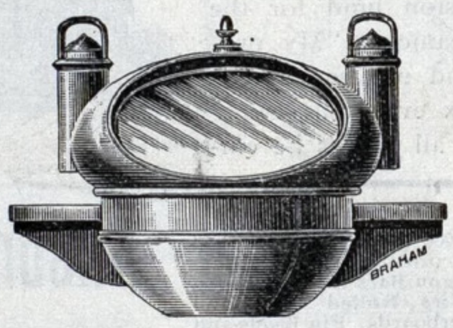

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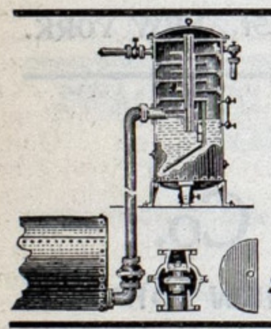

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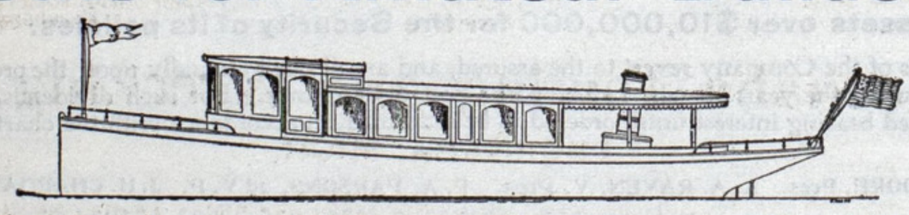

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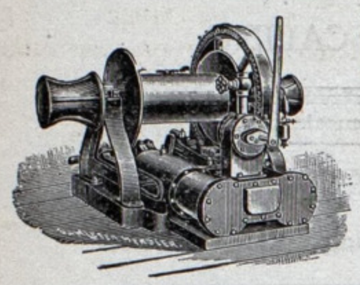

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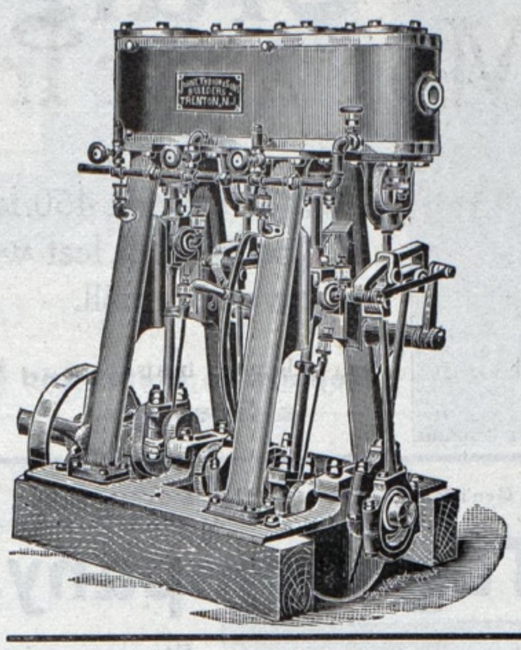

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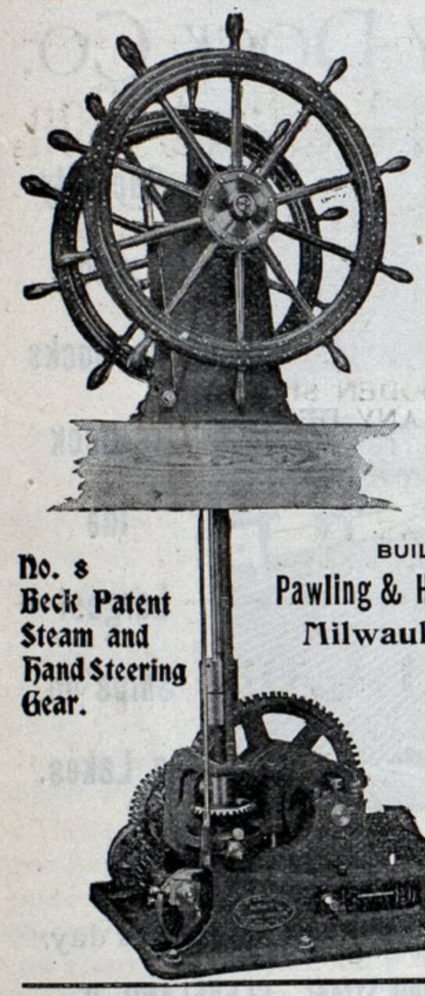

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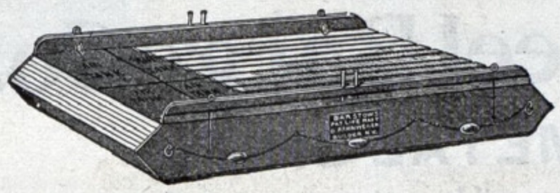

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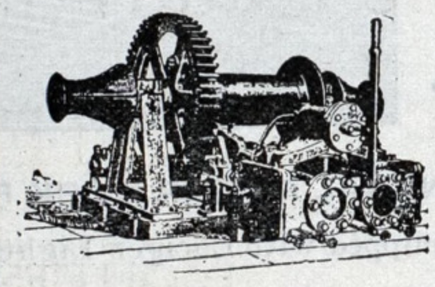

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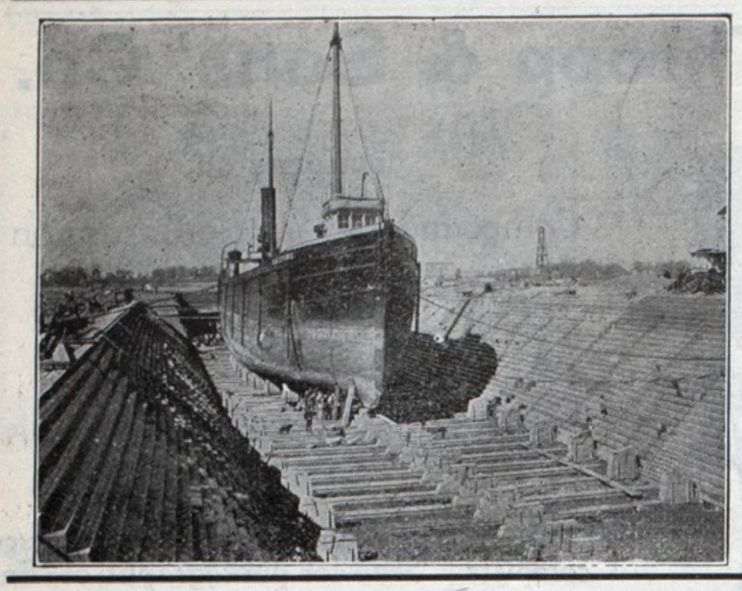

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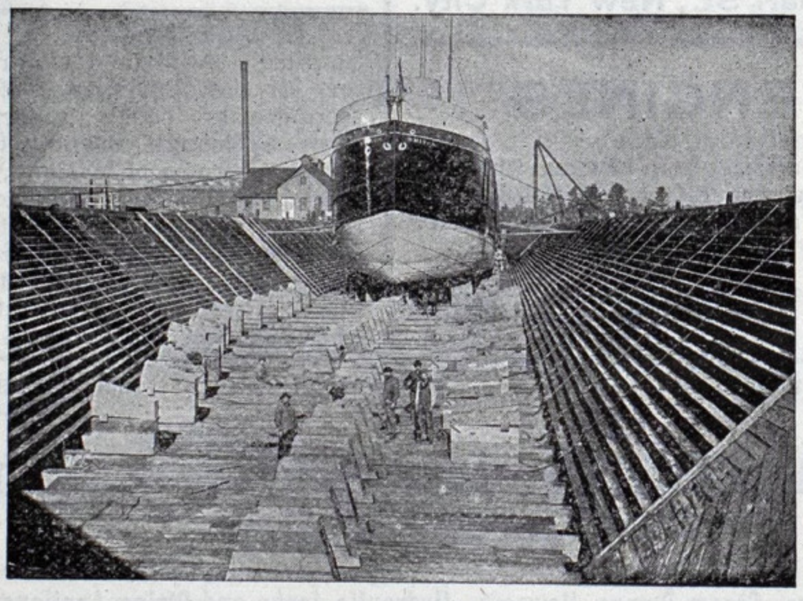

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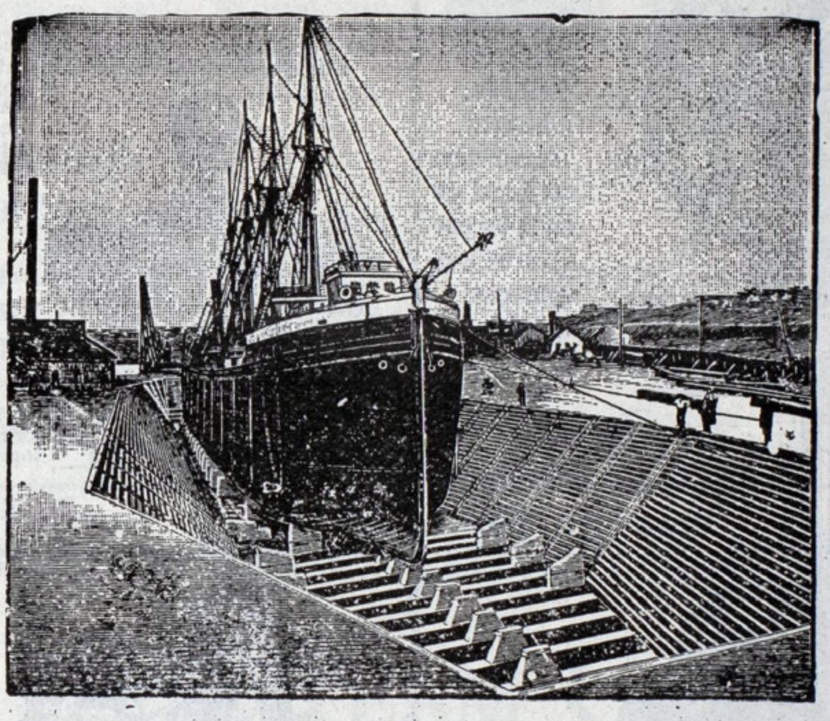

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